

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A direction finding radiation detector for detecting a direction of incidence of radioactive rays, the detector comprising:

a plurality of scintillators made of the same material, being arranged to overlap circumferentially at least in part so that they are shadowed by each other from radioactive rays incident in circumferential directions and so that light emitted from one of the scintillators is not incident on the other scintillators; and

photoreceptor devices each having a light receiving surface optically coupled to each of the scintillators, wherein

a combination of proportions of radioactive rays incident directly on the respective scintillators and radioactive rays incident indirectly, being shadowed by the other scintillators, varies with the direction of incidence ~~circumferentially~~ circumferentially, and

the scintillators are connected to amplifiers having respective different gains to shift peak positions with each other, the amplifiers are connected to a single A/D converter, and the A/D converter is connected to a single pulse height analyzer.

2. (Canceled)

3. (Original) The direction finding radiation detector according to claim 1, wherein the scintillators are three or more in number so that the direction of incidence is detected all around in the range of 0° to 360°.

4. (Previously Presented) The direction finding radiation detector according to claim 1, wherein the scintillators are formed by splitting a single scintillator in the circumferential direction.

5-7. (Canceled)

8. (Currently Amended) A radiation monitoring method ~~using comprising the~~
steps of
setting the direction finding radiation detector according to ~~claim 1~~-claim 1;
and
measuring a circumferential radiation using the direction finding radiation
detector.

9. (Previously Presented) A radiation monitoring apparatus comprising the
direction finding radiation detector according to claim 1.

10. (New) A direction finding radiation detector for detecting a direction of
incidence of radioactive rays, the detector comprising:

a plurality of scintillators made of the same material, being arranged to overlap
circumferentially at least in part so that they are shadowed by each other from radioactive rays
incident in circumferential directions and so that light emitted from one of the scintillators is
not incident on the other scintillators; and

photoreceptor devices each having a light receiving surface optically coupled
to each of the scintillators, wherein

a combination of proportions of radioactive rays incident directly on the
respective scintillators and radioactive rays incident indirectly, being shadowed by the other
scintillators, varies with the direction of incidence circumferentially,

and the scintillators are connected to respective amplifiers, the amplifiers are
connected to A/D converters having respective different conversion rates to shift peak
positions with each other, and the A/D converters are connected to a single pulse height
analyzer.

11. (New) The direction finding radiation detector according to claim 10, wherein the scintillators are three or more in number so that the direction of incidence is detected all around in the range of 0° to 360° .
12. (New) The direction finding radiation detector according to claim 10, wherein the scintillators are formed by splitting a single scintillator in the circumferential direction.
13. (New) A radiation monitoring method comprising the steps of
setting the direction finding radiation detector according to claim 10; and
measuring a circumferential radiation using the direction finding radiation detector.
14. (New) A radiation monitoring apparatus comprising the direction finding radiation detector according to claim 10.